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15/616-538	03/15/96	SKEEM	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER

3203

ART UNIT

03 PAPER NUMBER

DATE MAILED: 03/05/97

**BEST AVAILABLE COPY**

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

<b>Office Action Summary</b>	Application No. <b>08/616,538</b>	Applicant(s) <b>Skeem</b>
	Examiner <b>Nguyen</b>	Group Art Unit <b>3203</b>

Responsive to communication(s) filed on Feb 3, 1997

This action is **FINAL**.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

#### Disposition of Claims

Claim(s) 1-34 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

Claim(s) \_\_\_\_\_ is/are allowed.

Claim(s) 1-34 is/are rejected.

Claim(s) \_\_\_\_\_ is/are objected to.

Claims \_\_\_\_\_ are subject to restriction or election requirement.

#### Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

The proposed drawing correction, filed on \_\_\_\_\_ is  approved  disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All  Some\*  None of the CERTIFIED copies of the priority documents have been received.

received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

#### Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). 8

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 13, 28, and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by

Asada'276.

With reference to Figures 4 and 6, Asada discloses an abrasive cutting tool comprising: a monolithic substrate (5) having a substrate surface with plurality of teeth (7) extending therefrom, each tooth having a contoured surface; b) a layer comprising superabrasive grains (8) such as diamond, the layer being electroplated to at least a portion of the surface of each tooth to define a plurality of cutting levels parallel to the substrate surface, and each cutting level on each tooth being oriented such that a portion of each cutting level overlaps at least a portion of each other cutting level of the tooth; and c) an initial uppermost cutting level and successive uppermost cutting levels among the plurality of cutting levels of each tooth, whereby after the initial uppermost cutting level has been worn away by cutting the workpiece, each successive uppermost cutting level of the tooth presents to the workpiece a ring of superabrasive grain around the

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contoured surface of the tooth, and substantially all superabrasive grain within the ring simultaneously engages in cutting.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3-26, and 28-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Asada'276 in view of Scott'072.

Asada has been discussed above, but it does not disclose the cutting surface having a negative angle of inclination with respect to the intended direction of movement.

*Scott discloses,*  
With reference to Figs. 2-4, column 4, line 50 bridging to column 5, line 50, the mesh cutting element 34 defines a surface inclined relative to the travel direction 50 of the cutting tool. The cutting element 34 is a mesh comprising abrasive material formed by uniformly distributing and securing hard, wear resistance particles, such as industrial diamonds. The cutting mesh is bonded to the support links by an adhesive agent such as industrial epoxy or by brazing. The bonding agent may also include a layer or wearable or consumable material to provide additional support for the cutting mesh on the support links. With reference to Fig. 8, column 7, line 33 bridging to column 8, line 12, the inclination of the planar surface of the mesh, whether it is on the support or the cover, applies only a relatively small area of the trailing edge of the mesh cutting

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element to the material cut. This reduces the area of contact between the material to be cut and the cutting element, and thereby reduces the force required to accomplish the cutting action. As the mesh cutting element 34 wears at its trailing edge, some of the consumable material 48 following the cutting element 34 also wears away. However, it always leaves a next row of particles in abrading contact with the material to be cut. In essence, Scott discloses a cutting element having a cutting surface with a negative angle of inclination with respect to the intended direction of movement. Furthermore, Scott discloses in column 8, lines 16-18, this cutting element with its inclined cutting surface may be applied to a circular saw.

Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to have modified the cutting tool of Asada with the teaching of Scott to provide cutting teeth with inclined cutting surface to leave next lowermost level in abrading contact with the material to be cut to achieve efficient utilization of the cutting element.

In regard to claims 4-12, 15-26, and 31-32, it would have been obvious matter of design choice to select the grain concentration and hardness index for the tooth depending on the material to be cut. Such engineering specification is well within the skill of the artisan.

In regard to claims 33-34, it would have been obvious matter of design choice to apply the cutting element to core drills or abrasive sheets depending on the intended use.

*Response to Arguments*

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5. Applicant's arguments with respect to claims 1-34 have been considered but are moot in view of the new ground(s) of rejection.

In response to the applicant's argument that the cutting elements of the Scott cutting tool is not chemically bonded to the mesh substrate, please refer to the Scott reference, column 2, lines 43-45, the cutting mesh is bonded to the support link by brazing.

The Asada reference of the record in combination of the Scott reference provides a 103 rejection in response to the amendment which the applicant has tried to overcome the prior art. The rejection as described in the above action suggest a cutting tool with cutting elements having inclined cutting surface to leave next lowermost level in abrading contact with the material to be cut to achieve efficient utilization of the cutting element. In essence, the combination suggests the claimed invention.

### *Conclusion*

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this final action is set to expire THREE MONTHS from the date of this action. In the event a first response is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for response expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Nguyen whose telephone number is (703) 308-0163. The examiner can normally be reached on Monday-Friday from 7:00 AM-3:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Kisliuk, can be reached at (703) 308-1358. The fax number for this Group is (703) 305-3579. An inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist at (703) 308-1148.

George Nguyen

February 28, 1997

ROBERT A. ROSE  
PRIMARY EXAMINER  
ART UNIT 323

